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ARRANGEMENT IN A MOBILE MACHINE FOR GRINDING FLOOR SURFACES

The present invention relates to an arrangement according to the pre-characterising clause of the patent claim.

US 6238277 B1 discloses a mobile machine of the said type.

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In grinding floor surfaces the rate at which the grinding machine is advanced by an operator is naturally determined by the time it takes to obtain an acceptable grinding result. This rate is normally only a fraction of normal walking pace, something that the person advancing the machine ultimately finds very uncomfortable and tiring. Although
10 it would be possible to advance the machine at normal walking pace, this would then involve the need for repeated grinding, which may result in a failure to observe any occurrence of sections where the grinding result is unacceptable.

The object of the present invention is to release the operator of the grinding machine
15 from the actual propulsion of the machine. This is achieved in that the invention has the features specified in the characterising part of the patent claim.

The subordinate claims indicate alternative operative connections between operating devices and the control unit forming part of the arrangement according to the invention.

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The invention furthermore affords the advantage that a dust/sludge suction unit, which is coupled to the grinding machine via a suction hose, can be located in close proximity to the grinding machine in the space normally occupied by the operator. The suction hose can thereby be made shorter so that the flow losses therein are reduced and the suction
25 capacity is increased. If this increased suction capacity cannot be utilised in order to improve the result, there is the alternative option of reducing the energy required for the suction, thereby achieving an energy saving.

The operator is normally not required to continuously steer the machine but can
30 concentrate on monitoring the grinding result and if necessary increasing or reducing the rate of advance, removing any obstacles or even controlling more than one grinding machine.

The invention will be explained in more detail below with reference to figures attached, of which:

- 5 Fig. 1 shows, in schematic form, a perspective front view of a grinding machine according to the invention having a dust suction unit coupled thereto by a short suction hose;
- Fig. 2 shows, by way of example, a plan view of the grinding machine according to Fig. 1 from the rear and how an operator controls the grinding machine remotely;
- 10 Fig. 3 shows grinding disks arranged on a planet disk.

In the drawing 1 generally denotes a mobile machine for grinding floor surfaces according to the present invention. Fig. 1 shows how a dust suction unit 3 is connected to the grinding machine 1 by a very short suction hose 2. As already stated, the short suction hose 2 affords great advantages and is possible due to the fact that the dust suction unit 3 can be located in the space normally occupied by an operator.

20 The grinding machine comprises a housing 1a with a drive motor 1b arranged thereon and is supported partly by two wheels 4, 5 and partly by grinding disks 1c1, 1c2, 1c3, 1c4 located at the bottom of the housing and rotatably supported on a planet disk 1d. For driving the planet disk 1d and the grinding disks 1c1, 1c2, 1c3, 1c4, these are operatively connected to the motor 1b in a manner not further specified here, since this operative connection is not the subject matter of the present invention.

25 According to the invention, a drive motor 4a, 5a is mechanically connected to each wheel 4, 5 and is in turn electrically connected by leads 4b, 5b to a control unit 6. The latter comprises means, familiar to the person skilled in the art, for controlling the motors 4a, 4b and hence the direction of rotation and the rotational speed of the wheels 4, 5 as a function of control signals from an operating device 7, which is manually actuated by an operator 8. The control signals are transmitted from the operating device 7 to the control unit 6 via radio communications units in the operating device 7 and the control unit 6, as illustrated by antennae 6a and 7a connected to these respectively.

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The arrangement according to the invention allows the operator 8, from a location affording a good, clear view of the floor surface that is to be ground, to carry out this grinding and, if so required, to briefly study the grinding result at close quarters, and if required to control the machine in order to locally repeat the grinding.

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The operator is naturally able, whenever appropriate, to carry out the grinding in the hitherto conventional way, that is to say by manually guiding the machine 1 by means of control handles 1e and controls 1f provided thereon. Also visible on the drawing are connections 1g for electrical cables supplying the motor 1b and the control unit 6. The

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said electrical cables are suitably brought together on a carriage (not shown) or suspended above the floor surface that is to be ground.